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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/611,815	LE ET AL.	
	Examiner	Art Unit	
	Qing Chen	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-16,18-25 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-16,18-25 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is in response to the RCE filed on July 21, 2008.

2. **Claims 2-16, 18-25, and 27** are pending.

3. **Claims 3, 5, 14, 16, 18, 20, 21, and 27** have been amended.

4. **Claims 1, 17, 26, and 28-52** have been cancelled.

5. The objections to Claims 5, 6, 18, and 20 are withdrawn in view of Applicant's amendments to the claims. However, Applicant's amendments to Claim 27 fail to correctly address the objection due to a typographical error. Accordingly, this objection is maintained and further explained hereinafter.

6. The 35 U.S.C. § 112, second paragraph, rejections of Claims 21-25 are withdrawn in view of Applicant's amendments to the claims. However, Applicant's amendments to Claims 16 and 27 fail to fully address the rejections due to insufficient antecedent bases. Accordingly, these rejections are maintained and further explained hereinafter.

7. It is noted that Claim 14 contains an amendment by adding a period (.) at the end of the claim. However, the immediate prior version of Claim 14 already contains a period (.) at the end of the claim.

8. It is noted that Claim 27 contains an amendment that is submitted without markings to indicate the changes that have been made relative to the immediate prior version of the claim.

Continued Examination Under 37 CFR 1.114

9. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible

for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 21, 2008 has been entered.

Response to Amendment

Claim Objections

10. **Claims 18, 21, and 27** are objected to because of the following informalities:

- **Claims 18, 21, and 27** contain a typographical error: "[L]oopback" should read --loop-back --.
- **Claim 27** contains a typographical error: The semicolon (;) at the end of the limitation "an imaging client installed in the memory of the first computer [...]" should be changed to a colon (:).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. **Claims 16 and 27** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation "the imaging client" in "mediating [...] sector-based I/O requests between the imaging client and the source disk." There is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, the Examiner subsequently interprets this limitation as reading "the imaging client program" for the purpose of further examination.

Claim 27 recites the limitation "the file system." There is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, the Examiner subsequently interprets this limitation as reading "a file system" for the purpose of further examination. Applicant has inadvertently deleted the word "the" from the limitation "the file system drivers" in attempting to overcome the rejection. However, the limitation "the file system drivers" has sufficient antecedent basis. The claim is not rejected as being indefinite for this limitation.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. **Claims 2-5 and 18-20** are rejected under 35 U.S.C. 102(e) as being anticipated by **US 6,477,624 (hereinafter "Kedem")**.

As per **Claim 3**, Kedem discloses:

- loop-back mounting a simulated source disk in the second computer so that the simulated source disk is accessible by the operating system as a local disk *(see Column 8: 26-28, "To OS 102 and BIOS 104, LDIM 202 "pretends" that it is storage device 110. Thus, LDIM 202 is completely transparent to OS 102 and BIOS 104."; Column 9: 2-4, "In the former case, LDIM 202 emulates the selected image including the geometry of the image.")*; and

- configuring the simulated source disk as a proxy for the source disk by intercepting sector-based I/O requests directed to the simulated source disk and retrieving source disk data from the source disk according to the intercepted sector-based I/O requests *(see Column 3: 62-67 to Column 4: 1-3, "The purpose of the LDIM is to imitate the LPSD. That is, the LDIM, from the computer's perspective, appears exactly like the LPSD. More specifically, the LDIM functions to intercept and process requests that are intended to be received by the LPSD, which may not be in fact installed in the computer."; Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data." and 28-32, "If LDIM 202 determines that the cached data image has the most up to date version of the requested data, then LDIM 202 retrieves the requested data from storage device 110 and passes the data back to the component or device from which it received the request."; Column 13: 66 and 67 to Column 14: 1 and 2, "Another approach is to add the interception and implementation of the LDIM onto the physical persistent*

storage device 110. This functionality would be added before the device's controller (not shown) handles requests.").

As per **Claim 2**, the rejection of **Claim 3** is incorporated; and Kedem further discloses:

- populating a destination image with extracted contents of the source disk in which the destination image has files, attributes, and structural relationships between files identical to files, attributes, and structural relationships between files of the source disk *(see Column 1: 29-38, "The contents of the hard disk (also referred to as the hard disk's "disk image" or "data image") define the user's personalized environment: ..." and 53-62, "When the persistent storage device is a hard disk, the persistent storage device data image will frequently be called a "disk image."").*

As per **Claim 4**, the rejection of **Claim 3** is incorporated; and Kedem further discloses:

- forwarding the intercepted sector-based I/O requests to the first computer over a network *(see Column 10: 19-20, "In this situation, LDIM 202 merely forwards all read/write requests to the appropriate RDIM 204.").*

As per **Claim 5**, the rejection of **Claim 4** is incorporated; and Kedem further discloses:

- loading an imaging client program in the memory of the first computer, the imaging client program not being resident on the source disk *(see Column 9: 65-67, "RDIM 204 preferably includes image manipulation tools. The image manipulation tools allow system administrators to manipulate master data images stored on RPSD 206.")*; and

- passing the intercepted sector-based I/O requests to the imaging client program, the imaging client program directing the intercepted sector-based I/O requests to the source disk *(see Column 10: 26-29, "It should also be noted that the propagation of write requests from LDIM 202 to RDIM 204 for the purpose of updating the master data image can be timed to best utilize the network bandwidth.").*

As per **Claim 18**, Kedem discloses:

- a first computer having the source disk *(see Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204.")*; and

- a second computer having a memory with an operating system and an imaging server residing therein, the imaging server including computer executable instructions having code to create a simulated source disk that is a representation of information stored on the source disk and is accessed by the operating system as a local disk; and code to mount the simulated source disk in the second computer, with said memory including file system drivers to detect a file system of the simulated source disk and a network loopback driver intercepting sector-based I/O requests directed to the simulated source disk and retrieving source disk data from the source disk according to intercepted sector-based I/O requests intercepted by the network loopback driver *(see Column 1: 29-38, "The contents of the hard disk (also referred to as the hard disk's "disk image" or "data image") define the user's personalized environment: ..." and 53-62, "When the persistent storage device is a hard disk, the persistent storage device data image will frequently be called a "disk image.""; Column 3: 62-67 to Column 4: 1-3, "The purpose of the LDIM is to imitate the LPSD. That is, the LDIM, from the computer's perspective, appears*

exactly like the LPSD. More specifically, the LDIM functions to intercept and process requests that are intended to be received by the LPSD, which may not be in fact installed in the computer."; Column 6: 17-19, "... the operating system directs the request to an appropriate device driver for the physical device to which the request was made."; Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204." and 19-21, "LDIM 202, as shown in FIG. 2, communicates with OS 102 and BIOS 104 using standard interface 112 ..." and 26-28, "To OS 102 and BIOS 104, LDIM 202 "pretends" that it is storage device 110. Thus, LDIM 202 is completely transparent to OS 102 and BIOS 104." and 43-44, "... LDIM 202 includes a "mini-booter" software program (not shown)." and 47-48, "This is done by emulating a disk with the mini-booter installed as a loader." and 63-67 to Column 9: 1, "The mini-booter displays the list of available master data images and prompts the user to select one. The mini-booter communicates the selection to LDIM 202 and then either reboots the computer or resets the BIOS's disk geometry table to the geometry of the selected master data image." and 2-4, "In the former case, LDIM 202 emulates the selected image including the geometry of the image." and 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data." and 28-32, "If LDIM 202 determines that the cached data image has the most up to date version of the requested data, then LDIM 202 retrieves the requested data from storage device 110 and passes the data back to the component or device from which it received the request."; Column 13: 66 and 67 to Column 14: 1 and 2, "Another approach is to add the

interception and implementation of the LDIM onto the physical persistent storage device 110. This functionality would be added before the device's controller (not shown) handles requests.").

As per **Claim 19**, the rejection of **Claim 18** is incorporated; and Kedem further discloses:

- a network adapter, residing in said memory, to forward the intercepted sector-based I/O requests to the first computer *(see Column 10: 19-20, "In this situation, LDIM 202 merely forwards all read/write requests to the appropriate RDIM 204." and 49-51, "LDIM card 308 is equipped with an embedded processor, logic circuits, and memory 310 for enabling LDIM 202 to perform its functions.").*

As per **Claim 20**, the rejection of **Claim 19** is incorporated; and Kedem further discloses:

- a first computer memory within the first computer *(see Figure 1: 110)*; and
- an imaging client installed in the first computer memory *(see Column 9: 65-67, "RDIM 204 preferably includes image manipulation tools. The image manipulation tools allow system administrators to manipulate master data images stored on RPSD 206.")*, said imaging client comprising computer-executable instructions that include code to receive any source disk I/O requests issued from the second computer to the first computer, code to direct the intercepted sector-based I/O requests to the source disk, and code to pass the retrieved source disk data to the second computer in response to the source disk I/O requests *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master*

data image has the most up to date version of the requested data." and 28-32, "If LDIM 202 determines that the cached data image has the most up to date version of the requested data, then LDIM 202 retrieves the requested data from storage device 110 and passes the data back to the component or device from which it received the request."; Column 10: 26-29, "It should also be noted that the propagation of write requests from LDIM 202 to RDIM 204 for the purpose of updating the master data image can be timed to best utilize the network bandwidth.").

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kedem** in view of **US 7,000,231 (hereinafter "Gold").**

As per **Claim 6**, the rejection of **Claim 5** is incorporated; however, Kedem does not disclose:

- loading a secondary operating system in the memory of the first computer, said secondary operating system not being present on the source disk and mediating I/O requests between an imaging client program and the source disk.

Gold discloses:

- loading a secondary operating system in the memory of the first computer, said secondary operating system not being present on the source disk and mediating I/O requests between an imaging client program and the source disk *(see Column 3: 23-28, "A utility can then be used to reset a system identification of the computer entity, before switching to a secondary operating system to complete a build process." and 38-40, "A build process under control of a secondary "emergency" operating system can copy a fully installed primary operating system onto an operating system back-up volume.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Gold into the teaching of Kedem to include loading a secondary operating system in the memory of the first computer, said secondary operating system not being present on the source disk and mediating I/O requests between an imaging client program and the source disk. The modification would be obvious because one of ordinary skill in the art would be motivated to guarantee creation of an uncorrupted complete copy of the primary operating system *(see Gold – Column 3: 41-43).*

17. **Claims 7, 8, 12, 13, 15, 16, 21-23, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kedem** in view of **US 5,991,542 (hereinafter "Han")**.

As per **Claim 7**, the rejection of **Claim 2** is incorporated; and Kedem further discloses:

- mounting the destination image in an uninitialized state in the second computer as a simulated destination disk *(see Column 8: 63-67 to Column 9: 1, "The mini-booter displays the list of available master data images and prompts the user to select one. The mini-booter*

communicates the selection to LDIM 202 and then either reboots the computer or resets the BIOS's disk geometry table to the geometry of the selected master data image.");

- intercepting sector-based I/O requests directed to the simulated destination disk and directing the contents of the intercepted sector-based I/O requests to the destination image *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data.")*; and

- copying files of at least one file system of the simulated source disk to the corresponding file system of the simulated destination disk *(see Column 9: 48-51, "It is envisioned that a user who uses the DIMS would initially copy the data image stored on storage device 110 onto RPSD 206 and then always select that image as the master data image.")*.

However, Kedem does not disclose:

- retrieving partition and file system layout information from the source disk; and

- formatting the simulated destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk.

Han discloses:

- retrieving partition and file system layout information from the source disk *(see Column 4: 41-44, "A larger storage device, such as a hard disk or a file server, can be divided into many different volumes, or partitions, each of which can be formatted in a different manner.")*; and

- formatting the simulated destination image to have the same partitioning and file system as the simulated source disk and thus of the source disk *(see Column 4: 64-67, "This information is initially created when the volume is initialized, or formatted, and modified thereafter whenever the file management system writes information to the volume.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Han into the teaching of Kedem to include retrieving partition and file system layout information from the source disk; and formatting the simulated destination image to have the same partitioning and file system as the simulated source disk and thus of the source disk. The modification would be obvious because one of ordinary skill in the art would be motivated to create a disk image that has properties of the physical storage device *(see Han – Column 3: 30-34).*

As per **Claim 8**, the rejection of **Claim 7** is incorporated; and Kedem further discloses:

- converting the intercepted sector-based I/O requests to the simulated destination disk into sector accesses within the destination image *(see Column 9: 36-39, "Upon receiving the read request, RDIM 204 locates and reads the requested data from the selected master data image stored on RPSD 206 and then transmits the data back to LDIM 202.").*

As per **Claim 12**, the rejection of **Claim 7** is incorporated; and Kedem further discloses:

- in which the source disk is a source virtual disk *(see Column 1: 53-62, "When the persistent storage device is a hard disk, the persistent storage device data image will frequently be called a "disk image."").*

As per **Claim 13**, the rejection of **Claim 12** is incorporated; and Kedem further discloses:

- in which the destination disk is a physical disk *(see Figure 1: 110)*.

As per **Claim 15**, the rejection of **Claim 7** is incorporated; and Kedem further discloses:

- in which the first computer is the same as the second computer *(see Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204.")*.

As per **Claim 16**, Kedem discloses:

- in a second computer that includes an operating system that has file system software that detects a file system of disks mounted in the second computer, while the source disk is in an unmodified, unprepared state, extracting the contents of the source disk, defining extracted contents, and populating a destination image with the extracted contents of the source disk such that the destination image may have a different sector-by-sector content than the source disk but a destination file system logically equivalent to the at least one source file system, with identical files, attributes, and structural relationships between files as the source disk *(see Column 1: 29-38, "The contents of the hard disk (also referred to as the hard disk's "disk image" or "data image") define the user's personalized environment: ..." and 53-62, "When the persistent storage device is a hard disk, the persistent storage device data image will frequently be called a "disk image.""; Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204.")*;

- mounting a simulated source disk in the second computer so that the simulated source disk is accessible by the operating system as a local disk *(see Column 8: 63-67 to Column 9: 1, "The mini-booter displays the list of available master data images and prompts the user to select one. The mini-booter communicates the selection to LDIM 202 and then either reboots the computer or resets the BIOS's disk geometry table to the geometry of the selected master data image.")*;

- configuring the simulated source disk as a proxy for the source disk by intercepting sector-based I/O requests directed to the simulated source disk and retrieving source disk data from the source disk according to the intercepted sector-based I/O requests *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data." and 28-32, "If LDIM 202 determines that the cached data image has the most up to date version of the requested data, then LDIM 202 retrieves the requested data from storage device 110 and passes the data back to the component or device from which it received the request.")*;

- forwarding the intercepted sector-based I/O requests to the first computer *(see Column 10: 19-20, "In this situation, LDIM 202 merely forwards all read/write requests to the appropriate RDIM 204.")*;

- loading an imaging client program into a memory of the first computer *(see Column 9: 65-67, "RDIM 204 preferably includes image manipulation tools. The image manipulation tools allow system administrators to manipulate master data images stored on RPSD 206.")*;

- passing the intercepted sector-based I/O requests to the imaging client program, the imaging client program directing the intercepted sector-based I/O requests to the source disk *(see Column 10: 26-29, "It should also be noted that the propagation of write requests from LDIM 202 to RDIM 204 for the purpose of updating the master data image can be timed to best utilize the network bandwidth.")*;

- mediating, by the operating system, sector-based I/O requests between the imaging client program and the source disk *(see Column 6: 12-18, "1. An application wishing to read or write a file issues a request to an operating system API for such action." and "3. On a miss, or write through, the operating system directs the request to an appropriate device driver for the physical device to which the request was made."; Column 8: 19-21, "LDIM 202, as shown in FIG. 2, communicates with OS 102 and BIOS 104 using standard interface 112 ..."; Column 9: 9-11, "As is evident from FIG. 2, LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110.")*;

- mounting the destination image in an uninitialized state in the second computer as a simulated destination disk *(see Column 8: 63-67 to Column 9: 1, "The mini-booter displays the list of available master data images and prompts the user to select one. The mini-booter communicates the selection to LDIM 202 and then either reboots the computer or resets the BIOS's disk geometry table to the geometry of the selected master data image.")*;

- intercepting sector-based I/O requests directed to the simulated destination disk and directing results of the intercepted sector-based I/O requests to the destination image *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected,*

upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data.");

- converting the intercepted sector-based I/O requests to the simulated destination disk into sector accesses within the destination image *(see Column 9: 36-39, "Upon receiving the read request, RDIM 204 locates and reads the requested data from the selected master data image stored on RPSD 206 and then transmits the data back to LDIM 202.")*; and

- copying files of at least one file system of the simulated source disk to the corresponding file system of the simulated destination disk *(see Column 9: 48-51, "It is envisioned that a user who uses the DIMS would initially copy the data image stored on storage device 110 onto RPSD 206 and then always select that image as the master data image.")*.

However, Kedem does not disclose:

- retrieving partition and file system layout information from the source disk; and

- formatting the simulated destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk.

Han discloses:

- retrieving partition and file system layout information from the source disk *(see Column 4: 41-44, "A larger storage device, such as a hard disk or a file server, can be divided into many different volumes, or partitions, each of which can be formatted in a different manner.")*; and

- formatting the simulated destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk *(see Column 4: 64-67, "This*

information is initially created when the volume is initialized, or formatted, and modified thereafter whenever the file management system writes information to the volume.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Han into the teaching of Kedem to include retrieving partition and file system layout information from the source disk; and formatting the simulated destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk. The modification would be obvious because one of ordinary skill in the art would be motivated to create a disk image that has properties of the physical storage device *(see Han – Column 3: 30-34).*

As per **Claim 21,** the rejection of **Claim 18** is incorporated; and Kedem further discloses:

- wherein the imaging server further includes code to generate a simulated destination disk in response to the second computer mounting the destination image, with said memory further including a local loopback driver, a local adapter and a formatting module, with the local loopback driver intercepting sector-based I/O requests directed to the simulated destination disk and the local adapter comprising code to convert the intercepted sector-based I/O requests to the simulated destination disk into sector accesses within the destination image, the imaging server having code to copy files of at least one file system of the simulated source disk to the corresponding file system of the simulated destination disk *(see Column 8: 63-67 to Column 9: 1, "The mini-booter displays the list of available master data images and prompts the user to select one. The mini-booter communicates the selection to LDIM 202 and then either reboots the computer or resets the BIOS's disk geometry table to the geometry of the selected master data*

image."; Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data." and 36-39, "Upon receiving the read request, RDIM 204 locates and reads the requested data from the selected master data image stored on RPSD 206 and then transmits the data back to LDIM 202." and 48-51, "It is envisioned that a user who uses the DIMS would initially copy the data image stored on storage device 110 onto RPSD 206 and then always select that image as the master data image.").

However, Kedem does not disclose:

- the local loopback driver retrieving partition and file system layout information from the source disk; and

- the formatting module comprising code to format the destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk.

Han discloses:

- the local loopback driver retrieving partition and file system layout information from the source disk *(see Column 4: 41-44, "A larger storage device, such as a hard disk or a file server, can be divided into many different volumes, or partitions, each of which can be formatted in a different manner.")*; and

- the formatting module comprising code to format the destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk *(see Column 4: 64-67, "This information is initially created when the volume is initialized, or*

formatted, and modified thereafter whenever the file management system writes information to the volume.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Han into the teaching of Kedem to include the local loopback driver retrieving partition and file system layout information from the source disk; and the formatting module comprising code to format the destination image to have the same partitioning and file system(s) as the simulated source disk and thus of the source disk. The modification would be obvious because one of ordinary skill in the art would be motivated to create a disk image that has properties of the physical storage device *(see Han – Column 3: 30-34)*.

As per **Claim 22**, the rejection of **Claim 21** is incorporated; and Kedem further discloses:

- in which the source disk is a virtual disk *(see Column 1: 53-62, "When the persistent storage device is a hard disk, the persistent storage device data image will frequently be called a "disk image."")*.

As per **Claim 23**, the rejection of **Claim 22** is incorporated; and Kedem further discloses:

- in which the destination disk is a physical disk *(see Figure 1: 110)*.

As per **Claim 27**, Kedem discloses:

- a second computer *(see Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204.")*;

- a server operating system that resides in the second computer *(see Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204.")*;

- file system drivers within operating system of the second computer automatically detecting at least one file system of disks mounted in the second computer *(see Column 6: 17-19, "... the operating system directs the request to an appropriate device driver for the physical device to which the request was made.")*;

- an imaging server running within the second computer *(see Column 8: 43-44, "... LDIM 202 includes a "mini-booter" software program (not shown).")* and comprising computer-executable instructions:

- for extracting the contents of the source disk, defining extracted contents, and populating a destination image with the extracted contents of the source disk such that the destination image may have a different sector-by-sector content than the source disk but a destination file system logically equivalent to the at least one source file system *(see Column 1: 29-38, "The contents of the hard disk (also referred to as the hard disk's "disk image" or "data image") define the user's personalized environment: ..." and 53-62, "When the persistent storage device is a hard disk, the persistent storage device data image will frequently be called a "disk image."")*;

- for creating a simulated source disk corresponding to the source disk *(see Column 8: 47-48, "This is done by emulating a disk with the mini-booter installed as a loader.")*;

- while the source disk is in an unmodified, unprepared state, for mounting the simulated source disk in the second computer, file system drivers thereby automatically detecting a file system of the simulated source disk and therefore of the source disk and exposing a file

system to software running on the second computer *(see Column 8: 63-67 to Column 9: 1, "The mini-booter displays the list of available master data images and prompts the user to select one. The mini-booter communicates the selection to LDIM 202 and then either reboots the computer or resets the BIOS's disk geometry table to the geometry of the selected master data image.")*;

- a network loopback driver intercepting sector-based I/O requests directed to the simulated source disk *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data.")*;

- a network adapter forwarding the intercepted sector-based I/O requests to the first computer *(see Column 10: 19-20, "In this situation, LDIM 202 merely forwards all read/write requests to the appropriate RDIM 204.")*;

- an imaging client installed in the memory of the first computer *(see Column 9: 65-67, "RDIM 204 preferably includes image manipulation tools. The image manipulation tools allow system administrators to manipulate master data images stored on RPSD 206.")*, said imaging client comprising computer-executable instructions:

- for receiving any source disk I/O requests issued from the second computer to the first computer *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110.")*,

- for directing the intercepted sector-based I/O requests to the source disk *(see Column 9: 9-15, "After a master data image is selected, upon intercepting a read request, LDIM 202 is*

programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data."), and

- for passing to the second computer source disk data retrieved in response to the source disk I/O requests *(see Column 9: 28-32, "If LDIM 202 determines that the cached data image has the most up to date version of the requested data, then LDIM 202 retrieves the requested data from storage device 110 and passes the data back to the component or device from which it received the request."; Column 10: 26-29, "It should also be noted that the propagation of write requests from LDIM 202 to RDIM 204 for the purpose of updating the master data image can be timed to best utilize the network bandwidth.")*;

- a local loopback driver intercepting sector-based I/O requests directed to the simulated destination disk *(see Column 9: 9-15, "... LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110. After a master data image is selected, upon intercepting a read request, LDIM 202 is programmed to determine whether the cached data image or the selected master data image has the most up to date version of the requested data.")*;

- a local adapter comprising computer-executable instructions for converting the intercepted sector-based I/O requests to the simulated destination disk into sector accesses within the destination image *(see Column 9: 36-39, "Upon receiving the read request, RDIM 204 locates and reads the requested data from the selected master data image stored on RPSD 206 and then transmits the data back to LDIM 202.")*; and

- the imaging server further comprising computer-executable instructions for copying files of at least one file system of the simulated source disk to the corresponding file system of

the simulated destination disk *(see Column 9: 48-51, "It is envisioned that a user who uses the DIMS would initially copy the data image stored on storage device 110 onto RPSD 206 and then always select that image as the master data image.").*

However, Kedem does not disclose:

- a simulated destination disk generated by mounting the destination image in an uninitialized state in the second computer;

- a local loopback driver retrieving partition and file system layout information from the source disk; and

- a formatting module comprising computer-executable instructions for formatting the destination image to have the same partitioning and file system as the simulated source disk and thus of the source disk.

Han discloses:

- a simulated destination disk generated by mounting the destination image in an uninitialized state in the second computer *(see Column 4: 23-26, "In accordance with the present invention, the efficiency with which the downloading operation can be carried out is enhanced by making the disk image file mountable in each target computer 10.")*;

- a local loopback driver retrieving partition and file system layout information from the source disk *(see Column 4: 41-44, "A larger storage device, such as a hard disk or a file server, can be divided into many different volumes, or partitions, each of which can be formatted in a different manner.")*; and

- a formatting module comprising computer-executable instructions for formatting the destination image to have the same partitioning and file system as the simulated source disk and

thus of the source disk *(see Column 4: 64-67, "This information is initially created when the volume is initialized, or formatted, and modified thereafter whenever the file management system writes information to the volume.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Han into the teaching of Kedem to include a simulated destination disk generated by mounting the destination image in an uninitialized state in the second computer; a local loopback driver retrieving partition and file system layout information from the source disk; and a formatting module comprising computer-executable instructions for formatting the destination image to have the same partitioning and file system as the simulated source disk and thus of the source disk. The modification would be obvious because one of ordinary skill in the art would be motivated to create a disk image that has properties of the physical storage device *(see Han – Column 3: 30-34).*

18. **Claims 9-11 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kedem** in view of **Han** as applied to Claims 7 and 21 above, and further in view of **US 6,075,938 (hereinafter "Bugnion").**

As per **Claim 9**, the rejection of **Claim 7** is incorporated; however, Kedem and Han do not disclose:

- in which the destination image is a virtual disk file associated with a virtual computer.

Bugnion discloses:

- in which the destination image is a virtual disk file associated with a virtual computer *(see Column 10: 5-7, "Disco virtualizes disks by providing a set of virtual disks that any virtual machine can mount.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bugnion into the teaching of Kedem to include in which the destination image is a virtual disk file associated with a virtual computer. The modification would be obvious because one of ordinary skill in the art would be motivated to support different sharing and persistency models *(see Bugnion – Column 10: 7-8).*

As per **Claim 10**, the rejection of **Claim 9** is incorporated; and Kedem further discloses:

- in which the first computer is a physical computer and the source disk is a physical disk associated with the physical computer *(see Column 8: 6-7, "The DIMS is 110 a client/server system, and thus includes a client 202 and a server 204." and 10-12, "The DIMS also includes a persistent storage device (PSD) 206 that can be read from and written to by RDIM 204.").*

As per **Claim 11**, the rejection of **Claim 9** is incorporated; however, Kedem and Han do not disclose:

- in which the virtual disk file is a sparse virtual disk, having a predetermined capacity and initial sector contents with null values.

Official Notice is taken that it is old and well-known within the computing art to utilize a sparse virtual disk. Applicant has submitted in the "Background of the Invention" section of the specification that a VMM may implement a virtual disk using a sparse, sector-based image

format *(see Page 21, Paragraph [0094])*. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in which the virtual disk file is a sparse virtual disk, having a predetermined capacity and initial sector contents with null values. The modification would be obvious because one of ordinary skill in the art would be motivated to keep the virtual disk files small *(see Page 21, Paragraph [0094])*.

As per **Claim 14**, the rejection of **Claim 7** is incorporated; however, Kedem and Han do not disclose:

- in which the source disk is a first virtual disk associated with a first virtual computer and the destination disk is a second virtual disk associated with a second virtual computer.

Bugnion discloses

- in which the source disk is a first virtual disk associated with a first virtual computer and the destination disk is a second virtual disk associated with a second virtual computer *(see Column 10: 5-7, "Disco virtualizes disks by providing a set of virtual disks that any virtual machine can mount.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bugnion into the teaching of Kedem to include in which the source disk is a first virtual disk associated with a first virtual computer and the destination disk is a second virtual disk associated with a second virtual computer. The modification would be obvious because one of ordinary skill in the art would be motivated to support different sharing and persistency models *(see Bugnion – Column 10: 7-8)*.

As per **Claim 24**, the rejection of **Claim 21** is incorporated; however, Kedem and Han do not disclose:

- in which the destination image is a virtual disk file associated with a virtual computer.

Bugnion discloses:

- in which the destination image is a virtual disk file associated with a virtual computer *(see Column 10: 5-7, "Disco virtualizes disks by providing a set of virtual disks that any virtual machine can mount.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bugnion into the teaching of Kedem to include in which the destination image is a virtual disk file associated with a virtual computer. The modification would be obvious because one of ordinary skill in the art would be motivated to support different sharing and persistency models *(see Bugnion – Column 10: 7-8).*

As per **Claim 25**, the rejection of **Claim 24** is incorporated; however, Kedem and Han do not disclose:

- in which the first computer is a physical computer and the source disk is a physical disk associated with the physical computer.

Bugnion discloses:

- in which the first computer is a physical computer and the source disk is a physical disk associated with the physical computer *(see Column 10: 5-7, "Disco virtualizes disks by providing a set of virtual disks that any virtual machine can mount.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bugnion into the teaching of Kedem to include in which the first computer is a physical computer and the source disk is a physical disk associated with the physical computer. The modification would be obvious because one of ordinary skill in the art would be motivated to support different sharing and persistency models *(see Bugnion – Column 10: 7-8)*.

Response to Arguments

19. Applicant's arguments filed on July 21, 2008 have been fully considered, but they are not persuasive.

In the Remarks, Applicant argues:

a) In the Office action it was alleged that Kedem teaches the inclusion of a network loopback driver by reference to column 1, lines 29-38. Upon review of the text, there is no teaching or suggestion of a loop back process and/or loop back driver. Reference is also made in the Office action to column 1, lines 53-62 in support of the assertion that Kedem teaches a loopback driver. That text is as follows:

> WHEN THE PERSISITENT STORAGE DEVCIE IS A HARD DISK, THE PERSISTENT STORAGE DEVICE DATA IMAGE WILL FRERQUENTLY BE CALLED A DISK IMAGE.

Upon review of the text, it is manifest that no mention is made to a loop back process and/or loop back driver.

Examiner's response:

a) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, with respect to the Applicant's assertion that Kedem fails to teach or suggest a loop-back process and/or loop-back driver, the Examiner respectfully submits that Kedem clearly discloses a loop-back process and/or loop-back driver *(see Column 8: 26-28, "To OS 102 and BIOS 104, LDIM 202 "pretends" that it is storage device 110. Thus, LDIM 202 is completely transparent to OS 102 and BIOS 104."; Column 9: 2-4, "In the former case, LDIM 202 emulates the selected image including the geometry of the image.").* "Loop-back mounting" is defined in paragraph [0152] of the specification as "the process of taking a file and presenting it as a physical disk to the operating system." Although Kedem does not explicitly disclose a "loop-back" process or driver, Kedem clearly describes a process of taking a file and presenting it as a physical disk to the operating system. Kedem's invention involves the LDIM emulating a disk image of a storage device. By emulating the disk image, the LDIM "pretends" to be the storage device and thus, appears exactly like the storage device from the operating system's perspective.

Second, Examiner further submits that a "loop-back" process or driver is well-known to one of ordinary skill in the computing art and also conventional in the area of disk imaging. In paragraph [0155] of the specification, Applicant submits that loop-back technology in and of

itself is not novel and that Applicant's invention employs a known technology in the area of disk imaging.

Therefore, for at least the reasons set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 3 is proper and therefore, maintained.

In the Remarks, Applicant argues:

b) Moreover, it is the Applicants' position that the LDIM does not contain an image of a source disk. As stated in the text bridging column 11, line 62 to column 12, line 8 LDIM appears as a standard IDE disk drive to the host system CPU 302. Upon receiving a command from CPU 302, such as a read command, LDIM determines from which disk to retrieve the information and buffers the same in buffer 405 of LDIM. Thus, buffer 405 does not contain an image of either source disk 110 or 206. Moreover, Kedem does not mention that any of the remaining memory components of the LDIM the images of either source disk 110 or 206. Rather, the remaining memory modules are clearly indicated as include other information not consisting of an image of with source disk 110 and/or 206. See column 11, lines 16-61. From the foregoing description it is clear that LDIM does not contain an image of the source disk. Without containing an image of the source disk, it cannot be said that LDIM is loop back mounted as claimed. What is realized seen is that LDIM is not simply a file mounted as a pseudo- device. LDIM is, in fact, a physical device having multiple memory devices, both volatile and non-volatile that appears to be another physical disk. This is distinguishable from the presently claimed invention in which a file is presented as a physical disk to the operating system. See ¶ [0152]. Contrary to the assertions

made in the Office action, there is no indication of loop-back mounting a simulated disk, for the reasons discussed more fully below.

Examiner's response:

b) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, without acquiesce to the Applicant's assertion that the LDIM does not contain an image of a source disk, the Examiner first submits that the claim language does not require any limitation relating to a simulated source disk containing an image of a source disk and thus, the claims are not limited to the scope of such. In accordance with MPEP § 2111, during patent examination, the claims must be given the broadest reasonable treatment and interpreted as broadly as their terms reasonably allow. Applicant is reminded that in order for such limitations to be considered, the claim language requires to specifically recite such limitations in the claims, otherwise broadest reasonable interpretations of the broadly claimed limitations are deemed to be proper.

Second, with respect to the Applicant's assertion that without the LDIM containing an image of a source disk, it cannot be said that the LDIM is loop-back mounted as claimed, the Examiner has addressed the Applicant's arguments regarding "loop-back" mounting in the Examiner's response (a) hereinabove.

Therefore, for at least the reasons set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 3 is proper and therefore, maintained.

In the Remarks, Applicant argues:

c) In addition, claim 18 recites additional features that distinguish the claimed invention from Kedem. Specifically, claim 18 includes computer executable instructions having code to create a simulated source disk that is a representation of information stored on the source disk and is accessed by the operating system as a local disk. Kedem does not mention, discuss or advocate that the LDIM containing any information representative of the data of the source disk. Moreover, as discussed above, the LDIM does not contain the images of either source disk 110 or 206. Rather any information that is to be transmitted to the devices of the host system is acquired from one of the source disks 110 or 206 and stored in a buffer 405 of LDIM. See column 11, line 62 to column 12, line 8. Thus, buffer 405 does not contain an image of either source disk 110 or 206. The remaining memory modules are clearly indicated as include other information not consisting of an image of with source disk 110 and/or 206. See column 11, lines 16-61. It is Applicants' position that this indicates that Kedem did not envision having the LDIM contain an image of either source disk 110 and or 206.

Examiner's response:

c) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, without acquiesce to the Applicant's assertion that Kedem does not mention, discuss, or advocate that the LDIM containing any information representative of the data of the source disk, the Examiner first submits that the claim language does not require any limitation relating to a simulated source disk containing any information representative of the data of the

source disk and thus, the claims are not limited to the scope of such. In accordance with MPEP § 2111, during patent examination, the claims must be given the broadest reasonable treatment and interpreted as broadly as their terms reasonably allow. Applicant is reminded that in order for such limitations to be considered, the claim language requires to specifically recite such limitations in the claims, otherwise broadest reasonable interpretations of the broadly claimed limitations are deemed to be proper.

Second, with respect to the Applicant's assertion that Kedem does not mention, discuss, or advocate that the LDIM containing any information representative of the data of the source disk, the Examiner respectfully submits that Kedem clearly discloses "creat[ing] a simulated source disk that is a representation of information stored on the source disk and is accessed by the operating system as a local disk" *(see Column 8: 19-21, "LDIM 202, as shown in FIG. 2, communicates with OS 102 and BIOS 104 using standard interface 112 ..." and 26-28, "To OS 102 and BIOS 104, LDIM 202 "pretends" that it is storage device 110. Thus, LDIM 202 is completely transparent to OS 102 and BIOS 104."; Column 9: 2-4, "In the former case, LDIM 202 emulates the selected image including the geometry of the image.")*. Note that the LDIM emulating a disk image of a storage device. By emulating the disk image, the LDIM "pretends" to be the storage device and thus, appears exactly like the storage device from the operating system's perspective. The LDIM communicates with the operating system using a standard interface.

Therefore, for at least the reasons set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 18 is proper and therefore, maintained.

In the Remarks, Applicant argues:

d) Kedem does not teach controlling an imaging client in a computer in which the source data is maintained with the operating system of a second computer in which the simulated disk is present. To do so would destroy the intended function of Kedem: to completely decouple a persistent storage device data image seen by the computer from a persistent storage device. See column 3, line 34-37. To that end, Kedem teaches that it is the LDIM and not the operating system of the computer in which the LDIM is present that communicates with the persistent storage device. See column 8, lines 28-33; column 9, lines 28-47. As a result, it is LDIM that undertakes communicating with the source data and not the operating system.

Examiner's response:

d) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, without acquiesce to the Applicant's assertion that Kedem does not teach controlling an imaging client in a computer in which the source data is maintained with the operating system of a second computer in which the simulated disk is present, the Examiner first submits that the claim language only requires "mediating, by the operating system, sector-based I/O requests between the imaging client program and the source disk" and thus, the claims are only limited to the scope of such. In accordance with MPEP § 2111, during patent examination, the claims must be given the broadest reasonable treatment and interpreted as broadly as their terms reasonably allow.

Second, with respect to the Applicant's assertion that Kedem teaches the LDIM and not the operating system of the computer in which the LDIM is present that communicates with the persistent storage device, the Examiner respectfully submits that Kedem clearly discloses "mediating, by the operating system, sector-based I/O requests between the imaging client program and the source disk" *(see Column 6: 12-18, "1. An application wishing to read or write a file issues a request to an operating system API for such action." and "3. On a miss, or write through, the operating system directs the request to an appropriate device driver for the physical device to which the request was made."; Column 8: 19-21, "LDIM 202, as shown in FIG. 2, communicates with OS 102 and BIOS 104 using standard interface 112 ..."; Column 9: 9-11, "As is evident from FIG. 2, LDIM 202 functions to intercept requests (for example, read/write requests) that are intended to be received by storage device 110.")*. Note that read/write requests are issued to the operating system and then delegated by the operating system to the appropriate physical device. Thus, since the LDIM communicates with the operating system, one of ordinary skill in the art would readily comprehend that the operating system "mediates" the read/write requests intercepted by the LDIM.

Therefore, for at least the reasons set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 16 is proper and therefore, maintained.

In the Remarks, Applicant argues:

e) A set forth above with respect to claim 3, the present invention employs a loop-back mounting method that uses a loop back driver to present an abstraction/image, of a disk to the operating system. See ¶ [0152]. To that end, the simulated source disk would require an image of

the source disk in order to achieve this function. It is the Applicants' position that the LDIM does not contain an image of a source disk. As stated in the text bridging column 11, line 62 to column 12, line 8 LDIM appears as a standard IDE disk drive to the host system CPU 302. Upon receiving a command from CPU 302, such as a read command, LDIM determines from which disk to retrieve the information and buffers the same in buffer 405 of LDIM. Thus, buffer 405 does not contain an image of either source disk 110 or 206. Moreover, Kedem does not mention that any of the remaining memory components of the LDIM contain images of either source disk 110 or 206. Rather, the remaining memory modules are clearly indicated as including other information not consisting of an image of source disk 110 and/or 206. See column 11, lines 16-61. It is Applicants' position that this indicates that Kedem did not envision having the LDIM contain an image of either source disk 110 and or 206. As a result, it is submitted that Kedem does not teach having an image of the source disk in LDIM. Without an image of the source disk there is no reason to have a loop back driver.

Examiner's response:

e) Examiner disagrees. Examiner has addressed the Applicant's arguments regarding the LDIM does not contain an image of a source disk in the Examiner's response (b) hereinabove.

In the Remarks, Applicant argues:

f) Kedem is also completely silent with respect to a simulated destination disk being generated by mounting the destination image in an uninitialized state in the second computer. Assuming, arguendo, that the LPSD 110 may be considered a simulated destination disk, when

LDIM writes thereto, see column 9, lines 39-47. However, the destination image is not generated by mounting the same in an uninitialized state in the second computer. Rather, the LPSD 110 is a disk that is already mounted to the computer system when LDIM undertakes a write operation thereto. As a result, it is submitted that Kedem does not teach generating a simulated destination disk by mounting the destination image in an uninitialized state in the second computer.

Examiner's response:

f) Applicant's arguments have been considered but are moot in view of the new ground of rejection for Claim 27.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Q. C./

Examiner, Art Unit 2191

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191